

## **21. Colors and Solar Reflecting Performance of Wall Coatings of Buildings - High-Reflectance Coatings After One Year of Outdoor Exposure -**

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High-reflectance coatings have been used for the exterior of buildings, such as factories and cold storage warehouses, for thermal insulation in summer. To check the thermal insulation performance of high-reflectance coatings, an outdoor exposure test was conducted on products on the market. Monitoring of temperature and solar reflectance showed that the darker the color the higher the thermal insulation performance because high-reflectance coatings reflect infrared radiation more than ordinary coatings of the same color. Coatings of lighter colors showed larger drops in reflectance in the visible range by outdoor exposure and thus larger drops in thermal insulation. The identification of the relationship between brightness and thermal insulation performance has enabled the exterior colors to be decided by considering appearance and insulation performances and improved.

**Key words :** high-reflectance coatings, solar reflectance, brightness, outdoor exposure